

then the other ; of no plain *superficies*, but full of little cavities. The stone, when broken, is full of small pebble stones of an Ovall figure : its colour is gray like free-stone, but intermixt with veins of yellow and black. A part of it I have begg'd of Dr. *Haughten* for you, which I have sent to *Oxford*, whither a more exact account will be conveyed by the same person.

Extract of a Letter, lately written from Venice by the Learned Doctor Walter Pope, to the Reverend Dean of Rippon, Doctor John Wilkins, concerning the Mines of Mercury in Friuli; and a way of producing Wind by the fall of Water.

The Mines of *Mercury* in *Friuli*, a Territory belonging to the *Venetians*, are about a days Journey and a half distant from *Gorizia* Northwards, at a place call'd *Idria*, situated in a Valley of the *Julian Alps*. They have been, as I am inform'd, these 166. years in the possession of the Emperor, and all the Inhabitants speak the *Sclavonian* Tongue. In going thither, we travell'd several hours in the best Wood I ever saw before or since, being very full of *Firrs*, *Oaks*, and *Beeches*, of an extraordinary thickness, straitness, and height. The Town is built, as usually Towns in the *Alps* are, all of wood, the Church onely excepted, and another House wherein the Overseer liveth. When I was there, in *August* last, the Valley, and the Mountains too, out of which the *Mercury* was dugg, were of as pleasant a verdure, as if it had been in the midst of Spring, which they there attribute to the moistness of the *Mercury*; how truly, I dispute not. That Mine, which we went into, the best and greatest of them all, was dedicated to Saint *Barbara*, as the other Mines are to other Saints, the depth of it was 125. paces, every pace of that Country being, as they inform'd us, more then 5 of our Feet. There are two ways down to it; the shortest perpendicular way is that, whereby they bring up the Mineral in great Buckets, and by

by which oftentimes some of the workmen come up and down. The other, which is the usual way, is at the beginning not difficult, the descent not being much; the greatest trouble is, that in several places you cannot stand upright: but this holds not long, before you come to descend in earnest by perpendicular Ladders, where the weight of one's body is found very sensible. At the end of each Ladder, there are boards across, where we may breathe a little. The Ladders, as was said, are perpendicular, but being imagined produced, do not make one Ladder, but several parallel ones. Being at the bottom, we saw no more then what we saw before, only the place, whence the Mineral came. All the way down, and the bottom, where there are several lanes cut out in the Mountain, is lined and propt with great pieces of Fir-trees, as thick as they can be set. They dig the Mineral with Pick-axes, following the veins: 'tis for the most part hard as a stone, but more weighty; of a Liver-colour, or that of *Crocus Metallorum*. I hope shortly to shew you some of it. There is also some soft Earth, in which you plainly see the *Mercury* in little particles. Besides this, there are oftentimes found in the Mines round stones like Flints, of several bignesses, very like those Globes of Hair, which I have often seen in *England*, taken out of Oxes bellies. There are also several *Marcasites* and stones, which seem to have specks of Gold in them; but upon tryal they say, they find none in them. These round stones are some of them very ponderous, and well impregnated with *Mercury*; others, light, having little or none in them. The manner of getting the *Mercury* is this: They take of the Earth, brought up in Buckets, and put it into a Sive, whose bottom is made of wires at so great a distance, that you may put your finger betwixt them: 'tis carried to a stream of running water, and wash'd as long as any thing will pass through the Sive. That Earth which passeth not, is laid aside upon another heap: that which passeth, reserved in the hole, *G.* in Fig. 1. and taken up again by the second Man, and so on, to about ten or twelve sives proportionably less. It often happens in the first hole, where the second Man takes up his
Earth

Earth, that there is *Mercury* at the bottom; but towards the farther end, where the intervals of the wires are less, 'tis found in very great proportion. The Earth laid aside is pounded, and the same operation repeated. The fine small Earth, that remains after this, and out of which they can wash no more *Mercury*, is put into Iron retorts and stopt, because it should not fall into the Receivers, to which they are luted. The fire forces the *Mercury* into the Receivers: The Officer unluted several of them to shew us; I observed in all of them, that he first poured out perfect *Mercury*, and after that came a black dust, which being wetted with water discover'd it self to be *Mercury*, as the other was. They take the *Caput mortuum* and pound it, and renew the operation as long as they can get any *Mercury* out of it.

This is the way of producing the *Mercury*, they call *Ordinary*, which exceeds that, which is got by washing, in a very great proportion, as you will perceive by the account annexed. All the *Mercury* got without the use of Fire, whether by washing, or found in the Mines (for in the digging, some little particles get together, so that in some places you might take up two or three spoonfuls of pure *Mercury*) is call'd by them *Virgin-Mercury*, and esteem'd above the rest. I inquir'd of the Officer what vertue that had more, then the other; he told me that making an *Amalgama* of Gold and *Virgin-Mercury*, and putting it to the fire, that *Mercury* would carry away all the Gold with it, which common *Mercury* would not do.

The Engines, employed in these Mines, are admirable; the Wheels, the greatest that ever I saw in my life; one would think as great as the matter would bear: all moved by the dead force of the water, brought thither in no chargeable Aqueduct from a Mountain, 3 Miles distant: the water pumpt from the bottom of the Mine by 52 pumps, 26 on a side, is contrived to move other wheels, for several other purposes.

The Labourers work for a *Julio* a day, which is not above 6 or 7 pence, and indure not long; for, although none stay
under

under ground above 6 hours; all of them in time (some later, some sooner) become *paralytick*, and dye *bestick*.

We saw there a man, who had not been in the Mines for above half a year before, so full of *Mercury*, that putting a piece of *Brass* in his mouth, or rubbing it in his fingers, it immediately became white like Silver: I mean, he did the same effect, as if he had rubb'd *Mercury* upon it, and so paralytick, that he could not with both his hands carry a Glass, half full of Wine, to his mouth without spilling it, though he loved it too well to throw it away.

I have been since informed, that here in *Venice*, those that work on the back-side of Looking-glasses, are also very subject to the *Falsey*. I did not observe, that they had black Teeth; it may be therefore, that we accuse *Mercury* unjustly for spoiling the Teeth, when given in *Venereal* diseases. I confess, I did not think of it upon the place; but, black Teeth being so very rare in this Country, I think I could not but have markt it, had all theirs been so.

They use exceeding great quantity of Wood, in making and repairing the Engines, and in the Furnaces (whereof there are 16, each of them carrying 24. Retorts;) but principally in the Mines, which need continual reparation, the Fir-trees lasting but a small time under ground. They convey their Wood thus: About four miles from the Mines, on the sides of two mountains, they cut down the Trees, and draw them into the interjacent Valley, higher in the same Valley, so that the Trees, according to the descent of the water lye betwixt it and *Idria*: with vast charges and quantities of Wood they make a Lock or Dam, that suffers not any water to pass; they expect afterwards, till there be water enough to float these Trees to *Idria*; for, if there be not a spring, (as generally there is,) Rain, or the melting of the Snow, in a short time, afford so much water, as is ready to run over the Dam, and which (the Flood-gates being open'd) carries all the Trees impetuously to *Idria*, where the Bridge is built very strong, and at very oblique Angles to the stream, on purpose to stop them, and throw them on shore near the Mines.

Those

(25)

Those Mines cost the *Emperour* heretofore 70000. or 80000. *Florens* yearly, and yielded less *Mercury* then at present, although it costs him but 28000. *Florens* now. You may see what his Imperial Majesty gets by the following account, of what *Mercury* the Mines of *Idria* have produced these last three years.

1661	l.	1662.	l.
Ordinary <i>Mercury</i>	198481	Ordinary <i>Mercury</i>	225066
Virgin <i>Mercury</i>	6194	Virgin <i>Mercury</i>	9612
	<u>204675</u>		<u>234678</u>
1663	l.		
Ordinary <i>Mercury</i>	244119		
Virgin <i>Mercury</i>	11862		
	<u>255981</u>		

There are alwaies at work 280 persons, according to the relation I received from a very civil person, who informed me also of all the other particulars above mentioned, whose name is *Achatio Kappenjager*; his Office, *Contra-scrivano per sua Maestà Cesarea in Idria del Mercurio*.

To give some light to this Narrative, take this Diagramme: *F.* is the water, *C. B.* a vessel, into which it runs. *DG. EH. FI.* are streams, perpetually issuing from that vessel: *D. E. F.* three sives, the distance of whose wires at bottom lessen proportionably. *G.* the place, wherein the Earth, that pass'd through the sive *D.* is retained; from whence 'tis taken by the second man; and what passes through the sive *E.* is retained in *H.* and so of the rest. *K. L. M.* walt water, which is so much impregnated with *Mercury*, that it cureth Itches and sordid Ulcers. See Fig. 1.

I will trespass a little more upon you, in describing the contrivance of blowing the Fire in the *Brassworks* of *Tivoli* neer *Rome* (it being new to me) where the Water blows the Fire, not by moving the Bellows, (which is common) but by affording the Wind. See Fig. II. where *A.* is the

D

River

River, *B.* the Fall of it, *C.* the Tub into which it falls, *LG.* a Pipe, *G.* the orifice of the Pipe, or Nose of the Bellows, *GK.* the Hearth, *E.* a hole in the Pipe, *F.* a stopper to that hole, *D.* a place under ground, by which the water runs away. Stopping the hole *E.*, there is a perpetual strong wind, issuing forth at *G.*: and *G.* being stopt, the wind comes out so vehemently at *E.*, that it will, I believe, make a Ball play, like that at *Frescati.*

An Extract of a Letter, containing some Observations, made in the ordering of Silk-worms, communicated by that known Vertuoso, Mr. Dudley Palmer, from the ingenious Mr. Edward Digges.

I herewith offer to your *Society* a small parcel of my *Virginian* silk. What I have observed in the ordering of Silk-worms, contrary to the received opinion, is:

1. That I have kept leaves 24. hours after they are gathered, and flung water upon them to keep them from withering; yet when (without wiping the leaves) I fed the worms, I observed, they did as well as those fresh gathered.

2. I never observed, that the smell of *Tobacco*, or smells that are rank, did any waies annoy the worm.

3. Our Country of *Virginia* is very much subject to Thunders: and it hath thundered exceedingly when I have had worms of all sorts, some newly hatched; some half way in their feeding; others spinning their Silk; yet I found none of them concern'd in the Thunder, but kept to their business, as if there had been no such thing.

4. I have made many bottoms of the Brooms (wherein hundreds of worms spun) of *Holly*; and the prickles were so far from hurting them, that even from those prickles they first began to make their bottoms.

I did hope with this to have given you assurance, that by retarding the hatching of seed, two crops of Silk or more might

Fig: II

N^o 2^d

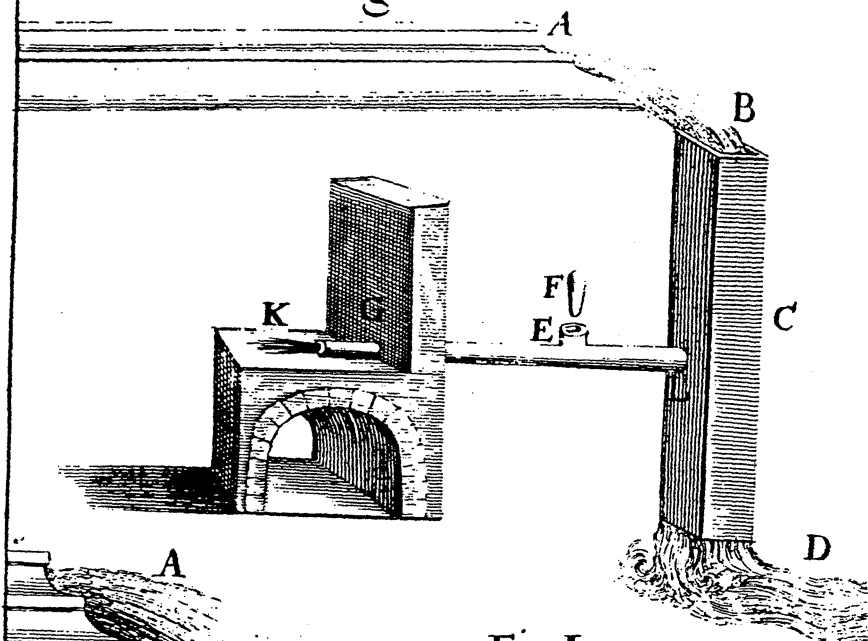


Fig: I

